THAT WHICH IS CLAIMED:

1. A method of stimulating hair growth, comprising administering a therapeutic amount of a hydrogel matrix to an intradermal or subdermal site where hair growth is desired, the matrix composition comprising gelatin and a long chain carbohydrate.

2. The method of Claim 1, wherein the matrix comprises about 0.01 to about 40 mM gelatin.

3. The method of Claim 1, wherein the gelatin comprises denatured collagen.

4. The method of Claim 1, wherein the long chain carbohydrate comprises dextran.

5. The method of Claim 4, wherein the matrix comprises about 0.01 to about 10 mM dextran.

6. The method of Claim 1, wherein the long chain carbohydrate has a molecular weight of about 20,000 to about 1,000,000 Daltons.

7. The method of Claim 1, wherein the matrix further comprises an effective amount of polar amino acids selected from the group consisting of arginine, lysine, histidine, glutamic acid, and aspartic acid.

8. The method of Claim 7, wherein the effective amount of polar amino acids comprises about 3 to about 150 mM of polar amino acids.

9. The method of Claim 7, wherein the effective amount of polar amino acids comprises about 10 to about 65 mM of polar amino acids.

10. The method of Claim 7, wherein the polar amino acids are selected from the

group consisting of arginine, glutamic acid, lysine and mixtures thereof.

11. The method according to claim 10, wherein the matrix comprises:
about 2 to about 60 mM of L-glutamic acid;
about 0.5 to about 30 mM of L-lysine; and
about 1 to about 40 mM of arginine.

12. The method of Claim 11, wherein the matrix comprises:
about 5 to about 40 mM of L-glutamic acid;
about 1 to about 15 mM of L-lysine; and
about 1 to about 30 mM of arginine.

13. The method according to claim 10, wherein the effective amount of polar amino acids comprises about 2 to about 60 mM of L-glutamic acid.

14. The method according to claim 10, wherein the effective amount of polar amino acids comprises about 1 to about 40 mM of arginine.

15. The method of Claim 10, wherein the effective amount of polar amino acids comprises about 0.5 to about 30 mM of L-lysine.

16. The method of Claim 1, wherein the matrix further comprises at least one nitric oxide inhibitor.

17. The method of Claim 16, wherein the nitric oxide inhibitor is selected from the group consisting of L-cysteine, L-arginine analogues, cystine, heparin, and mixtures thereof.

18. The method of Claim 16, wherein the nitric oxide inhibitor is present in an amount of about 5 to about 1000 μM.

19. The method of Claim 16, wherein the nitric oxide inhibitor is present in an amount of about 20 to about 200 μM.

20. The method of Claim 1, wherein the matrix further comprises about 5 to about 500 μM of L-cysteine.

21. The method of Claim 20, wherein the matrix comprises about 15 to about 25 μM of L-cysteine.

22. The method of Claim 1, wherein the matrix further comprises about 5 to about 500 μM of an L-arginine analogue.

23. The method of Claim 22, wherein the L-arginine analogue comprises aminoguanidine.

24. The method of Claim 22, wherein the matrix comprises about 15 to about 25 μM of an L-arginine analogue.

25. The method of Claim 1, wherein the matrix further comprises a superoxide inhibitor.

26. The method of Claim 25, wherein the superoxide inhibitor comprises EDTA or a salt thereof.

27. The method of Claim 25, wherein the superoxide inhibitor is present in an amount of about 1 to about 8 mM.

28. The method of claim 1, wherein the gelatin comprises denatured collagen and the long chain carbohydrate comprises dextran.

29. The method of Claim 1, wherein said administering step comprises injecting

the matrix into one or more intradermal or subdermal locations.

30. A method of stimulating hair growth, comprising administering a therapeutic amount of a hydrogel matrix to an intradermal or subdermal site where hair growth is desired, the matrix composition comprising denatured collagen, dextran, and an effective amount of polar amino acids selected from the group consisting of arginine, lysine, histidine, glutamic acid, and aspartic acid.

31. The method of Claim 30, wherein the effective amount of polar amino acids comprises about 3 to about 150 mM of polar amino acids.

32. The method of Claim 31, wherein the effective amount of polar amino acids comprises about 10 to about 65 mM of polar amino acids.

33. The method of Claim 30, wherein the polar amino acids are selected from the group consisting of arginine, glutamic acid, lysine and mixtures thereof.

34. The method according to claim 33, wherein the matrix comprises:

about 2 to about 60 mM of L-glutamic acid;

about 0.5 to about 30 mM of L-lysine; and

about 1 to about 40 mM of arginine.

35. The method of Claim 30, wherein the matrix further comprises at least one nitric oxide inhibitor.

36. The method of Claim 35, wherein the nitric oxide inhibitor is selected from the group consisting of L-cysteine, L-arginine analogues, cystine, heparin, and mixtures thereof.

37. The method of Claim 35, wherein the nitric oxide inhibitor is present in an amount of about 5 to about 1000 μM.

38. The method of Claim 35, wherein the nitric oxide inhibitor is present in an amount of about 20 to about 200 μM.

39. The method of Claim 30, wherein the matrix further comprises about 5 to about 500 μM of L-cysteine.

40. The method of Claim 30, wherein the matrix further comprises about 5 to about 500 μM of an L-arginine analogue.

41. The method of Claim 30, wherein the matrix further comprises a superoxide inhibitor.

42. The method of Claim 41, wherein the superoxide inhibitor comprises EDTA or a salt thereof.

43. The method of Claim 30, wherein said administering step comprises injecting the matrix into one or more intradermal or subdermal locations.

44. A method of stimulating hair growth, comprising administering a therapeutic amount of a hydrogel matrix to an intradermal or subdermal site where hair growth is desired, the matrix composition comprising denatured collagen, dextran, aminoguanidine, L-cysteine, and an effective amount of polar amino acids selected from the group consisting of arginine, lysine, histidine, glutamic acid, and aspartic acid.

45. The method of Claim 44, wherein said administering step comprises injecting the matrix into one or more intradermal or subdermal locations.